

1 **Claims Amendment**

2 **Claim Listing:**

- 3 1. (original) An electronic circuit system named Mobile Safety Communication (MSC)  
4 device embedded into a rearview/side mirror of a vehicle comprising: a GPS  
5 receiver circuit module with a planar antenna; a wireless Communication  
6 circuit module with a planar antenna and a USB interface; a plurality optical  
7 lenses and CCD/CMOS sensors with single JPEG/MPEG compression circuit  
8 module and a USB interface; a RISC CPU based central control module  
9 circuit having a plurality of UART serial control ports, a plurality of USB  
10 device control ports, a plurality of USB host control ports, an Ethernet  
11 network ports, a DRAM and Flash Memory controllers, and the central  
12 control processor executing MSC software; a Real-time clock with battery; a  
13 Smart Card Access host electronics module; a Flash memory storage; a  
14 Lithium-ion battery; vibration and motion sensor/gauge with a micro-  
15 controller; both USB Host and USB Device outlets; Ethernet Communication  
16 outlet; wherein all of these electronics circuit modules soldered in a PCB and  
17 embedded into the rearview or side mirror of a vehicle.  
18
- 19 2. (original) The Mobile Safety Communication (MSC) device according to claim 1,  
20 further molded into stand-alone unit is mounted at the proper position to the  
21 windshield glass of a vehicle.  
22
- 23 3. (original) The MSC device according to claim 2, wherein the proper positions of the  
24 windshield glass are mounted at the highest position for better wireless  
25 communication and with GPS planar antenna facing the sky and better visual  
26 recording positions of a vehicle.  
27  
28

1 4. (original) The MSC device according to claim 1, an electronic circuit IC (Integrated  
2 Circuit) package in a SOC (System On Chip) form that comprising: a RISC  
3 CPU central control module; a digital signal processing part of GPS receiver  
4 module; a digital signal processing part of wireless Communication module; a  
5 digital camera pixel bus with JPEG/MPEG compression circuit module; a  
6 plurality UART serial I/O ports; a flash memory; a plurality USB host and  
7 device control ports; an Ethernet communication circuit.

8  
9  
10 5. (original) The MSC device according to claim 1, wherein a wireless communication  
11 module that includes but is not limited to GMS, CDMA, 802.11, MURS, FRS,  
12 GMRS, HAM, CB radio communication with planar antennas embedded into  
13 the vehicle's rearview or side mirror.

14  
15 6. (original) The MSC device according to claim 2, wherein a wireless communication  
16 module that includes but is not limited to GMS, CDMA, 802.11, MURS, FRS,  
17 GMRS, HAM, CB radio communication with planar antennas embedded into  
18 stand-alone unit is mounted at the proper position to the windshield glass of a  
19 vehicle.

20  
21 7. (original) The MSC device according to claim 5, wherein a printed circuit trace (FR-4)  
22 antenna, a ceramic chip antenna or a PIFA antenna of the wireless  
23 communication is applied to the rearview/side mirror of a vehicle.

24  
25 8. (original) The MSC device according to claim 6, wherein a printed circuit trace (FR4)  
26 antenna, a ceramic chip antenna or a PIFA antenna of the wireless  
27 communication applied to a stand-alone unit which is mounted at the proper  
28 position to the windshield glass of a vehicle.

1  
2 9. (original) The MSC device according to claim 1, wherein a printed circuit (FR4) trace  
3 antenna, multi-layer ceramic chip antenna or PIFA antenna of a GPS receiver  
4 is glued on the windshield glass with a pig-tail coax cable connected to the  
5 GPS receiver module.  
6

7 10. (original) The MSC device according to claim 9, further the planar antenna of preferred  
8 ceramic chip antenna forming into the attachment part of a rearview mirror that  
9 sticks on the windshield glass, holds the GPS chip antenna for better reception  
10 of GPS signals.  
11

12 11. (original) The MSC device according to claim 1, wherein a contact or a contactless  
13 Smart Card reader device is embedded into the rearview/side mirror of a  
14 vehicle that serves as a second key for an anti-car-theft device.  
15

16 12. (original) The MSC device according to claim 2, wherein a contact or a contactless  
17 Smart Card reader device is embedded into a stand-alone unit that serves as a  
18 second key for an anti-car-theft device.  
19

20 13. (original) The MSC device according to claim 5, wherein the wireless communication  
21 module controlled by the central control that serve as a radio beacon for car  
22 theft alarm, emergency help beacon, receiving internet data communication  
23 signals that includes but is not limited to data/voice/video information, earth-  
24 quake alarm, tornado alarm, enemy attack alarm and wireless broadband  
25 communication terminal to a PC, notebook PC or PDA.  
26

27 14. (original) The MSC device according to claim 1, wherein a Flash memory storage  
28 embedded into the rearview/side mirror of a vehicle in the form of Smart

Media Card, Compact Flash Card, Secure Digital Card, Multi-Media Card or plan Flash memory IC soldered in the PCB of a MSC.

15. (original) The MSC device according to claim 1, wherein an Ethernet Communication Outlet is implanted in the rearview/side mirror of a vehicle.

16. (original) The MSC device according to claim 2, wherein an Ethernet Communication Outlet is implanted in the stand-alone unit version of MSC device.

17. (original) The MSC device according to claim 1, wherein both the USB host and USB device outlets is embedded in the rearview/side mounted mirror of a vehicle.

18. (original) The MSC device according to claim 2, wherein both the USB host and USB device outlets is embedded into the stand-alone version of MSC device.

19. (original) The MSC device according to claim 1, further with the USB/Ethernet outlet and the connection, between a MSC host to the mass storage Hard Disk for the commercial vehicle, records long periods of driving via the USB or an Ethernet interface.

20. (currently amended) The MSC device according to claim 1, wherein both the front-view and rearview ~~wide-angle-view~~ lenses are embedded into the rearview/side mirror in a ~~camouflaged method where the LED flash turns on when camera~~ shuts manner to allow operation during the night or dark moment.

21. (original) The MSC device according to claim 19, wherein a multiplexer circuit that selects among plurality of CCD/CMOS lenses for digital camera compression module to reduce the redundancy of MPEG/JPEG compression circuit.

1  
2 22. (currently amended) The MSC device according to claim 19, wherein the wide-angle  
3 view of the lenses is equalized to compensate the driver's head and rearview  
4 which resides behind the rearview mirror where portions of the reflecting  
5 material is processed in a way such that the light reflects less for visual  
6 recording.

7  
8 23. (withdrawn) The MSC device according to claim 1, wherein the operation method of  
9 the MSC functions including: a vehicle accident emergency alarm activation;  
10 an anti-theft alarm activation; a voice/motion recording scheme coordinated  
11 with the MSC motion sensor/gauge; a digital video recording scheme  
12 coordinated with the MSC motion sensor/gauge; an earthquake, tornado and  
13 enemy attack warning scheme; a built-in Flash Memory of MSC downloaded  
14 to USB mobile driver to retrieve the video/voice/motion recording when an  
15 external USB mobile driver is plugged in to the MSC USB device outlet; the  
16 transferring from DRAM to Flash memory when vehicle power off and built-  
17 in Lithium-ion battery kicked on; MSC device works as a USB wireless  
18 communication adaptor when connected to a USB host such as a laptop PC  
19 for wireless communication; MSC device works as a USB GPS receive  
20 adaptor when connected to a USB host such as a laptop PC for mapping and  
21 display; MSC device as a USB voice communication adaptor when connected  
22 to a USB host such as a laptop PC; MSC device as a USB digital camera  
23 adaptor when connected to a USB host such as a laptop PC;

24  
25 24. (original) The MSC device according to claim 1, wherein a double spring attached  
26 metal ball based acceleration/de-acceleration sensor/gauge for detecting and  
27 measuring the acceleration, de-acceleration, vibration and flip over  
28 conditions of a vehicle.

1  
2 25. (currently amended) The MSC device according to claim 24, further comprising a  
3 micro-controller to identify significant instances to the central control module  
4 to coordinate the video/voice/motion recording and alarm/emergency  
5 activation. This Said micro-controller also takes the vehicle's speedometer  
6 input to consolidate with the motion gauge/sensor to record more complete  
7 vehicle motion data in the Flash memory.  
8

9 26. (original) The MSC device according to claim 1, wherein the USB interfaces for  
10 connecting between the central control to the multiple MSC peripheral  
11 modules comprising: a wireless communication module with USB interface; a  
12 voice communication and compression module with USB interface; a  
13 multiple CCD/CMOS lenses with single JPEG/MPEG compression module  
14 with USB interface; USB outlet to external ~~MSC devices~~; MSC devices.  
15

16 27. (cancelled) The MSC device according to claim 26, wherein the Central Control  
17 utilized a Samsung RISC CPU S3C2410X and GPS module utilized a ST  
18 Micro-electronics STB5610, ST20-GPS chip set and wireless communication  
19 module utilized a TI TNETW1100B and JPEG/MPEG compression utilized a  
20 DIVIO NW800 and voice communication module utilized TigerJet ST560  
21 and USB hub controller utilized the ATMET AT43312 to compose the main  
22 electronic parts of MSC.  
23  
24  
25  
26  
27  
28

1 28. (new) A method of operating MSC device comprising:

2 I. Normal operation functions including

3 Detection of ignition and power on conditions;

4 A burglar alarm/beacon activation with voice/video recording upon fail of smart card  
5 access;

6 Normal video/voice/motion recording in DRAM;

7 Storing the digital camera from DRAM to Flash in the instance of significant events  
8 identified by the MSC motion sensor/gauge;

9 Transferring the voice/video/motion data from DRAM to Flash upon emergency  
10 button/driving termination events.

11 II. USB/Ethernet control operation including:

12 Detection of ignition and power on conditions;

13 Detection of Ethernet, USB Host and USB Device terminal plug-in events;

14 Setting up the Ethernet communication link to mass storage hard disk;

15 Selecting USB communication protocol and communicating with the USB digital  
16 camera monitor device, GPS mapping device, USB voice call device and USB  
17 wireless communication devices;

18 Downloading External USB Flash memory to retrieve the recorded  
19 video/voice/motion from MSC Flash;

20 Storing the video/voice/motion to a USB mass Storage;

21 III. DRAM to Flash transfer operation including:

22 Detection of significant events;

23 Transferring last few seconds of video/voice/motion from DRAM to Flash.  
24  
25  
26  
27  
28

1 Amendments to Description/Specification

2  
3 Paragraph [0094] has been amended

4 [0094] Figure 21 shows a laptop PC as a MSC host connected to the USB outlet of the  
5 MSC to perform MSC functions; ~~776 is the~~. The laptop PC ~~with~~ has a USB connection  
6 cable 785-775 linked to the USB host outlet 787 of MSC-~~777~~. The ~~776~~-laptop PC can  
7 perform the GPS mapping diagram, real-time digital camera display of front-view and  
8 rearview, Internet broadband access or IP voice call on the display.  
9

10  
11 **Cleaned-Up version of paragraph [0094]**

12 Figure 21 shows a laptop PC as a MSC host connected to the USB outlet of the MSC to  
13 perform MSC functions. The laptop PC has a USB connection cable 785 linked to the  
14 USB host outlet 787 of MSC. The laptop PC can perform the GPS mapping diagram,  
15 real-time digital camera display of front-view and rearview, Internet broadband access or  
16 IP voice call on the display.  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28